

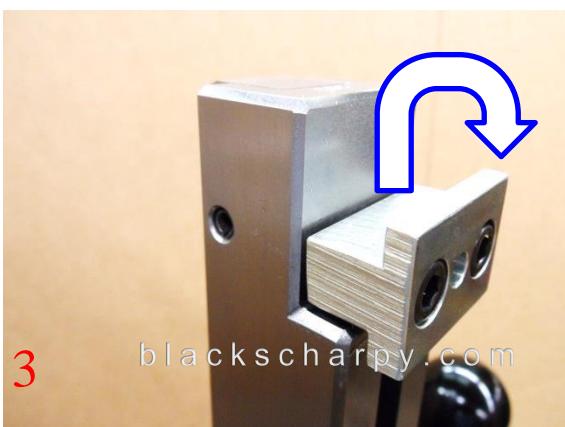
USER MANUAL

6 A. Fitting the Broach

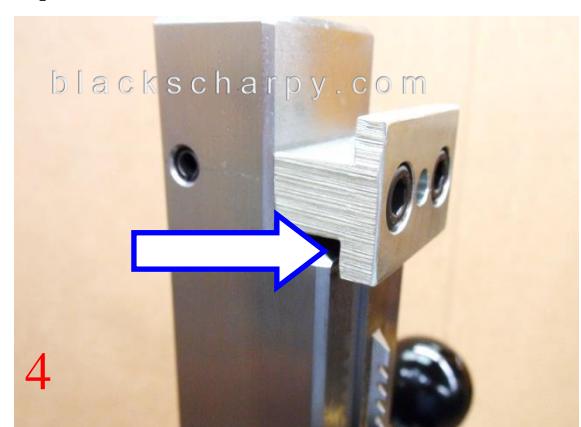
Raise the rack & insert the support pin



Loosen the top clamp retaining screws and withdraw the top clamp a small amount



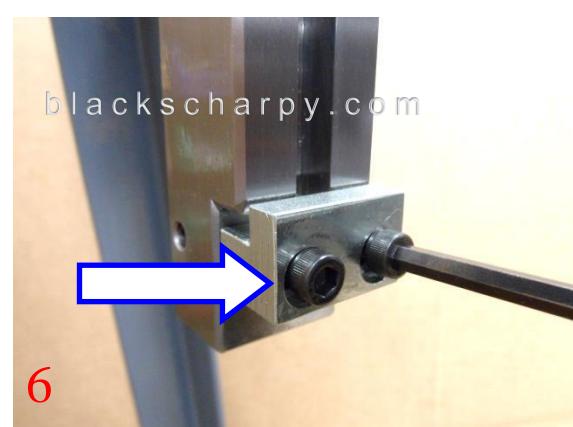
Note: top clamp can be removed and rotated 180° for different broach types



Top clamp position for C & H type broaches



Top clamp position for N & JS type broaches



Lower the rack and remove the bottom clamp screws

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Bottom clamp removed



Slide the broach into the groove in the rack



Push the broach upwards until it is located in the top clamp



Fit the bottom broach clamp

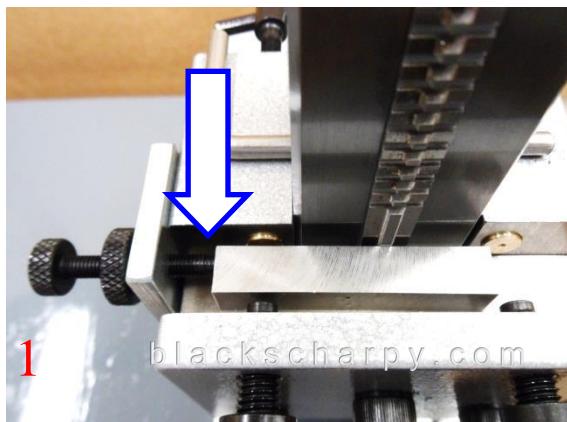


With upwards pressure, tighten the bottom clamp screws

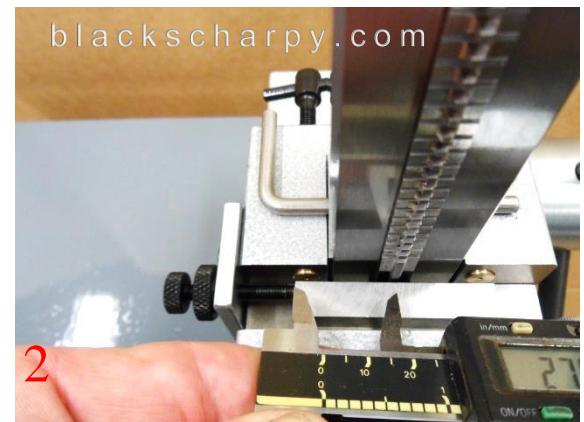


Raise the rack and insert the support pin, then tighten the top clamp screws

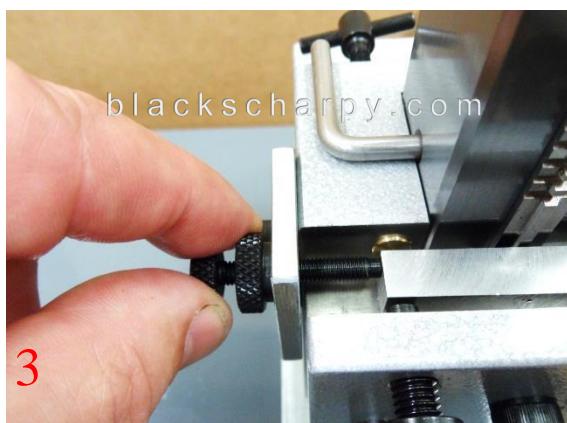
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6B. Setting specimen Axial Position

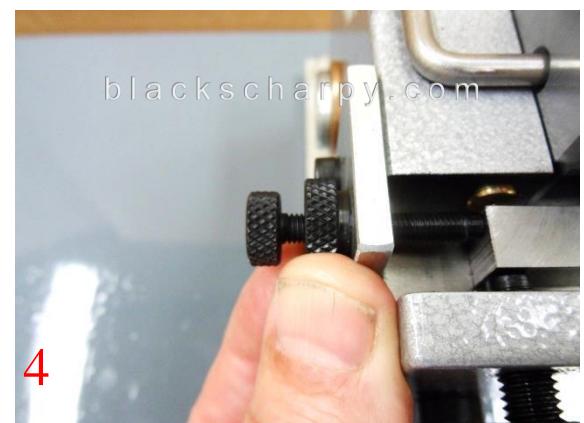
Load 10mm specimen into clamp assembly so that the specimen is contacting the axial adjusting screw



Check axial position and broach a specimen



Check axial position and re-adjust position if required

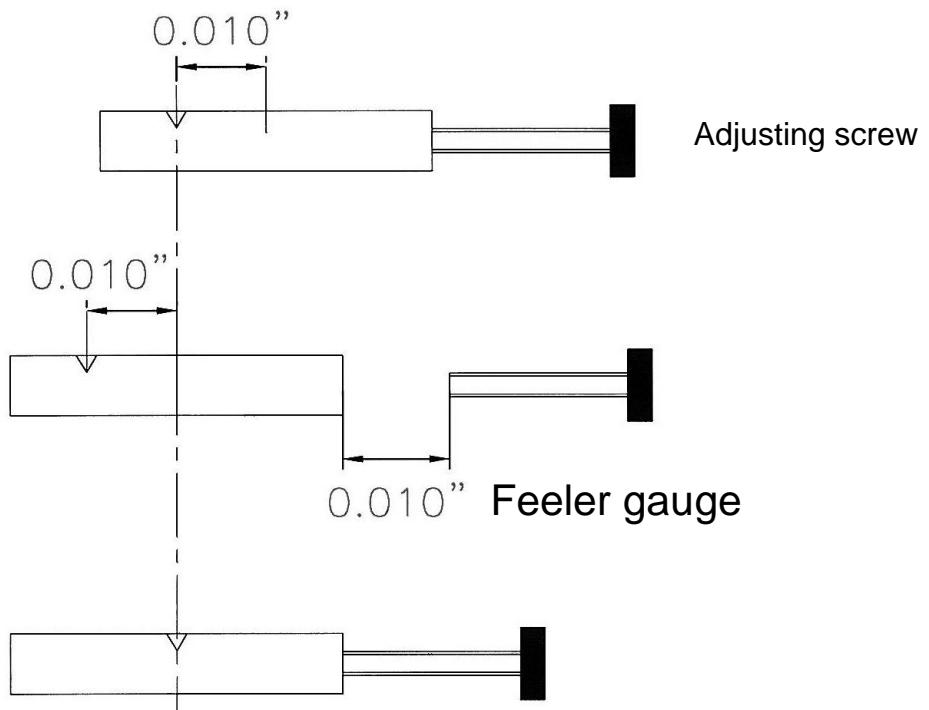


Always tighten the locking nut, so securing the axial adjusting screw position

USER MANUAL
**CUSTOMER TO CHECK AXIAL POSITION,
 WITH THEIR OWN EQUIPMENT**

Notch to left of specimen centre line, by say 0.010"

1. Initial notch position

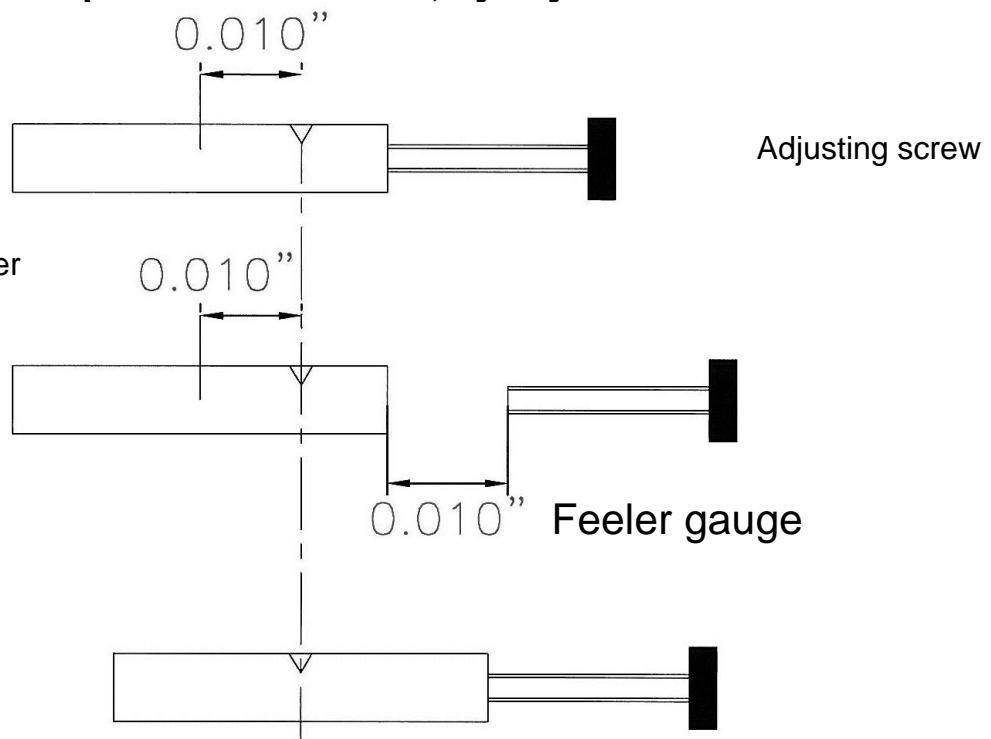


2. Unclamp specimen
 3. Move specimen using
 0.010" feeler gauge
 4. Clamp specimen

5. Reposition adjusting
 screw

Notch to right of specimen centre line, by say 0.010"

1. Initial notch position



2. Reposition adjusting
 screw using 0.010" feeler
 gauge

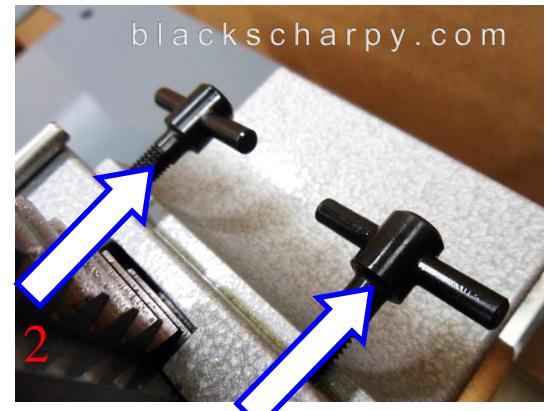
3. Unclamp specimen
 4. Move specimen
 5. Clamp specimen

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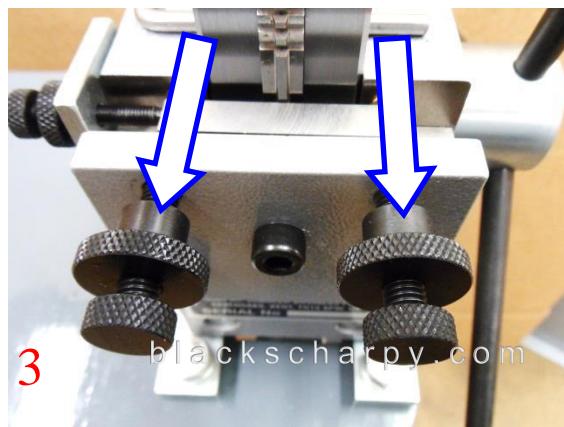
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6C. Setting Broach Depth

Raise the rack and insert the support pin



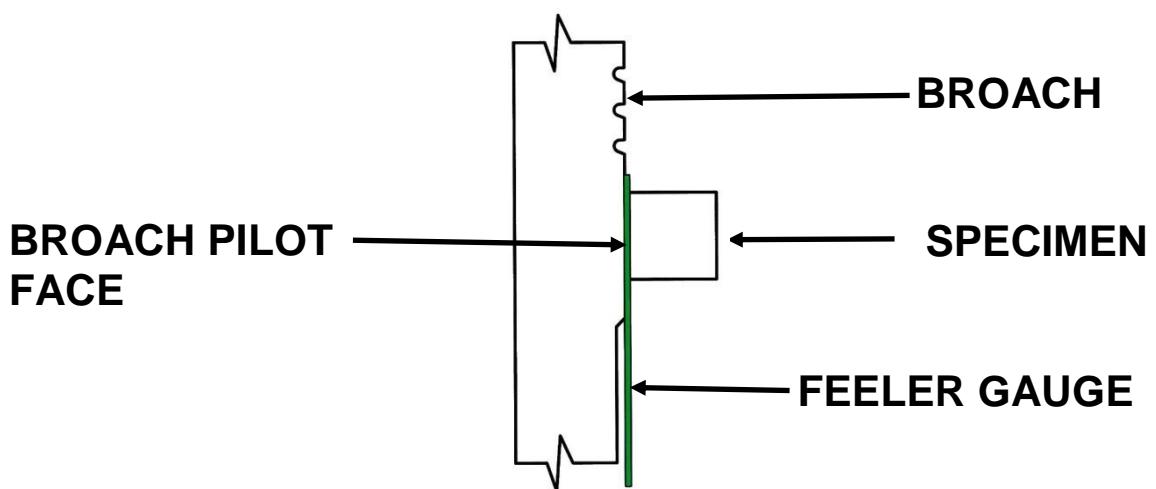
Back off the clamping screws



Back off the stop adjusting screws and locknuts



Load the specimen



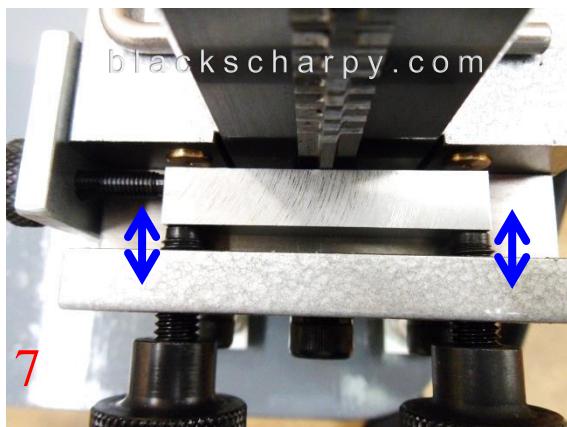
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Table 1**USER MANUAL**

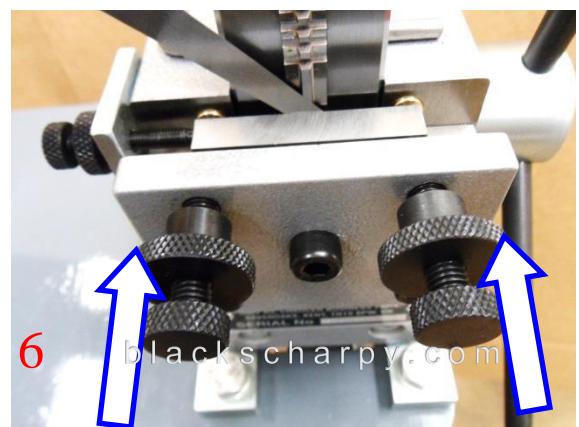
NOTCH	BROACH TYPE	BROACH	FEELER GAUGE THICKNESS
2mm 'V'	C	CNB30-027A2	0.005"
2mm "U"	P	CNB30-006A2	0.016"
2mm 'U'	N	CNB30-005A2	0.055"
3mm 'U'	N	CNB30-005A2	0.016"
5mm 'U' (2 Cuts)	JS	CNB30-004A2	0.005" 1st CUT
0.13"/3.3mm "V"	H	CNB30-002A2	0.004"



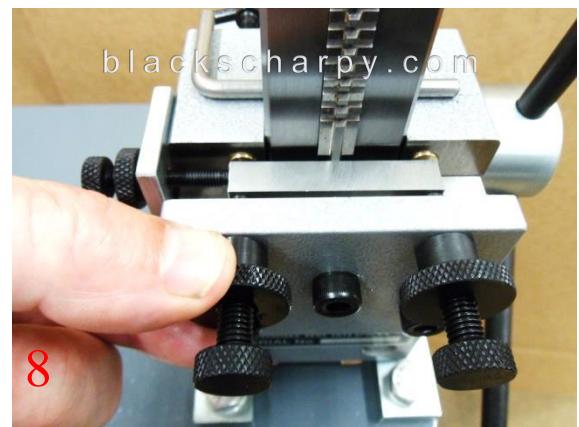
Set feeler gauge thickness as in table 1 and place between the broach pilot face and the specimen face



Ensure the stop adjusting screws are equally adjusted



Advance the stop adjusting screws, so that the feeler gauge is a sliding fit



Tighten the stop adjusting screw locknuts

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Tighten the clamping screws

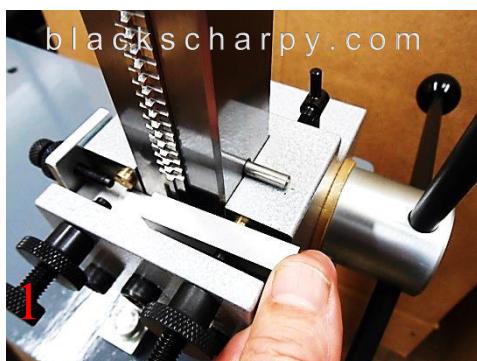


Recheck the feeler gauge is a sliding fit

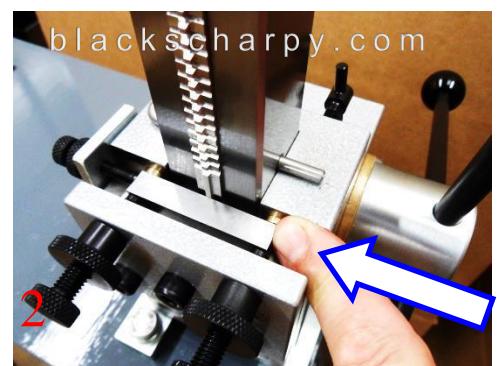


If necessary readjust the stop adjusting screws until the feeler gauge is a sliding fit

6D. Broaching Specimen



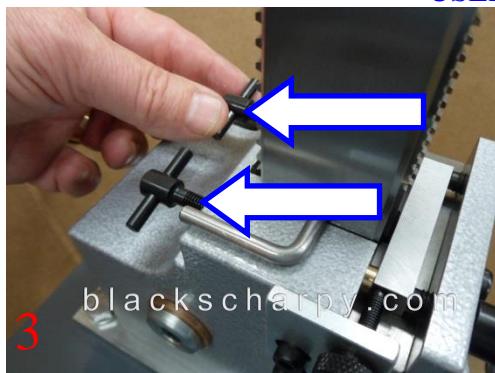
Load specimen



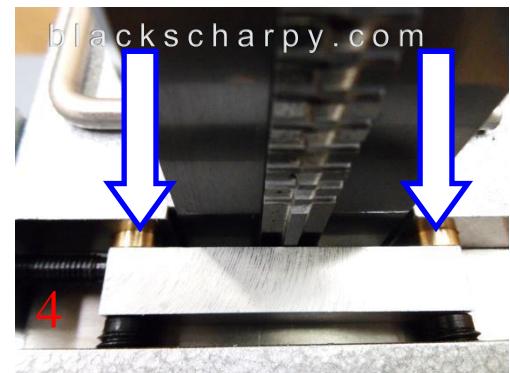
Push specimen up against the axial adjusting screw

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Clamp specimen using clamping screws



Clamping pins securing the specimen



Apply cutting oil to the broach teeth, using brush supplied with machine.

We recommend RTD metal cutting liquid



Hold handle & remove rack supporting pin



Rotate the handle at an even rate to cut the notch

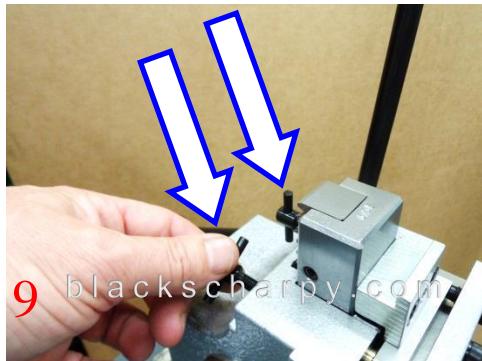


Stop when the broach has cut the notch and the top clamp has come to rest on the specimen

Note: To prevent damage to broach teeth always remove specimen BEFORE raising the broach

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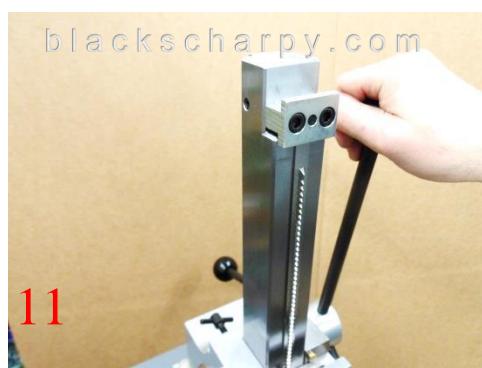
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9 blackscharpy.com
Release the clamping screws, raise the rack 1mm and remove the specimen



10 blackscharpy.com
Specimen broached



11 blackscharpy.com
Raise the broach



12 blackscharpy.com
Fit rack support pin



13 blackscharpy.com
Clean broach teeth using wire brush supplied with machine, ensuring cuttings are removed from teeth gulley's



14 blackscharpy.com
Thoroughly clean clamping area using brush supplied. The machine is now ready to cut next notch

USER MANUAL

6 E. Adjusting Depth of Cut

Check notch depth



Adjust the feeler gauge size, by the change in depth required

Note:

If the depth of notch needs to be increased, reduce the feeler gauge size.

If the depth of notch needs to be reduced, increase the feeler gauge size.

USER MANUAL

6 F. JS BROACHING, 5mm U notch

1st cut. Use feelers as in Table 1 to set the broach depth

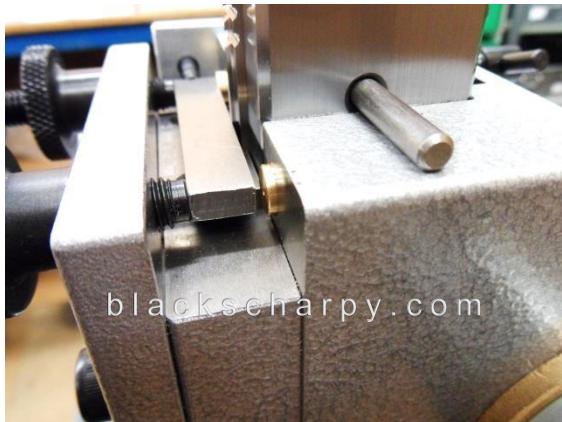


1st cut completed, producing a 3mm deep notch



2nd cut. Place the 2mm packer, supplied with the broach, behind the specimen to produce a 5mm deep notch

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10 G. SUB SIZE SPACER (OPTION)

For 10mm square and 10 x 7.5mm sub-size specimens, NO SPACER is required.

For 10 x 5.0mm sub-size specimens, SPACER CNB35-033A4 is required.

For 10 x 4.0mm sub-size specimens, SPACER CNB35-030A4 is required.

For 10 x 3.3 and 3.0mm sub-size specimens, SPACER CNB35-029A4 is required.

For 10 x 2.5mm sub-size specimens, SPACER CNB35-032A4 is required.

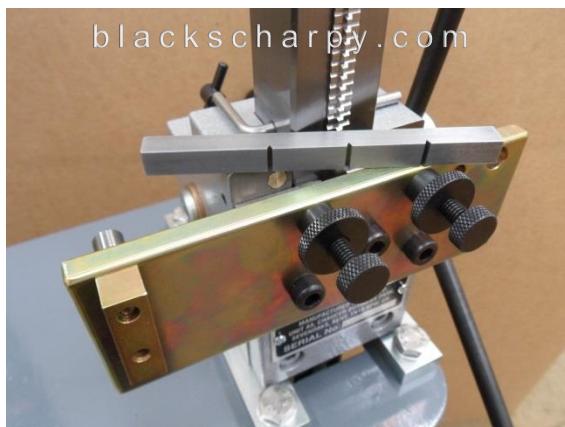
Fixing the spacer

The spacer is held in place by 2 countersunk slotted screws. If the spacer is removed to broach 10mm square or 10 * 7.5mm subsize specimens, secure the 2 off countersunk slotted screws in the fixing holes, to prevent the broach cuttings from entering the holes.

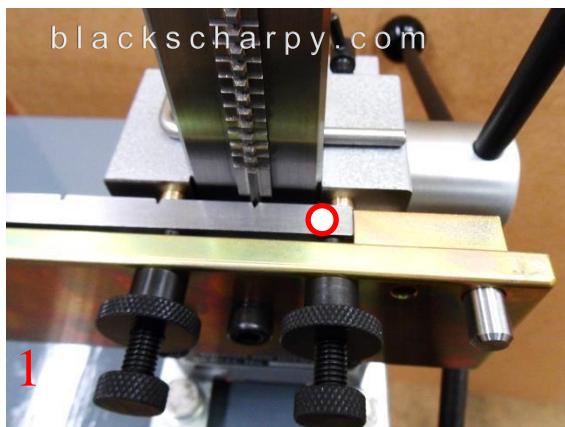
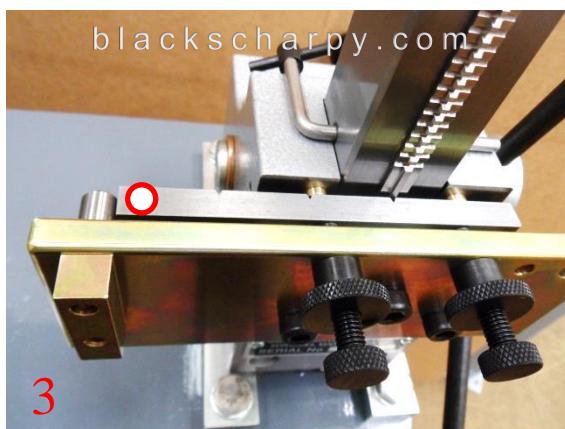
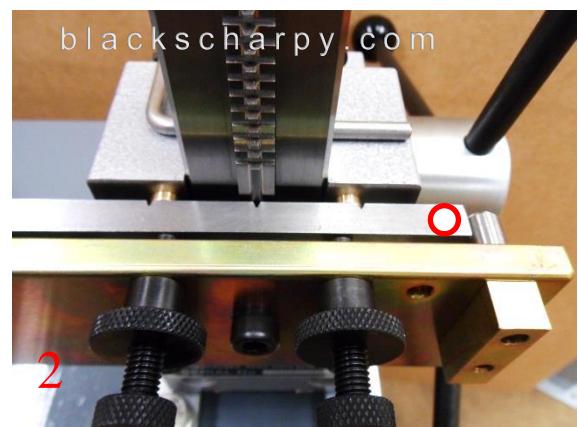


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10 H. MULTI NOTCH (OPTIONS)

The multi notch attachment is normally fitted at RJW Ltd., but can be fitted by customers who have an engineering department

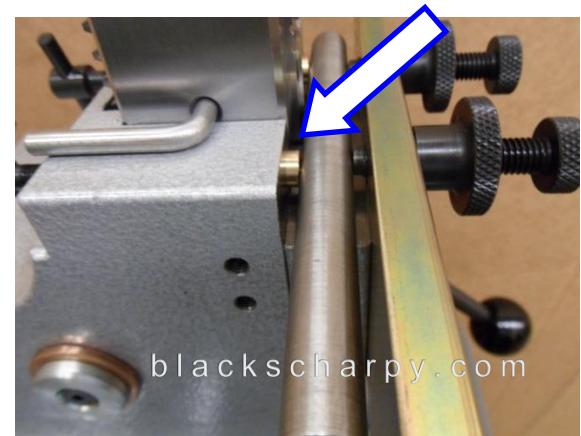
10mm square multi notch specimen**Broaching 10mm Square Multi Notch****Broaching 1st notch****Broaching 3rd notch****Broaching 2nd notch**

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Broaching 0.45"/11.4mm Round Multi Notch, with "H" broach

Round multi notch specimen.
Angular orientation of notches
must be judged by eye or
scribed lines.



A round specimen firmly
clamped



Broaching 1st notch



Broaching 2nd notch

Note:
Up to 3 notches can be
produced in square or
round specimens, at a
28mm pitch

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